WHAT IS CLAIMED IS:

1. A method of targeting a compound to a cell over-expressing a matrix metalloproteinase, a plasminogen activator, or a plasminogen activator receptor, the method comprising the steps of:

(1) administering to the cell a mutant protective antigen protein comprising a matrix metalloproteinase or a plasminogen activator-recognized cleavage site in place of the native protective antigen furin-recognized cleavage site, wherein the mutant protective antigen is cleaved by a matrix metalloproteinase or a plasminogen activator; and

(ii) administering to the cell a compound comprising a lethal factor polypeptide comprising a protective antigen binding site; wherein the lethal factor polypeptide binds to cleaved protective antigen and is translocated into the cell, thereby delivering the compound to the cell.

2. The method of claim 1, wherein the cell overexpresses a matrix metalloproteinase.

3. The method of claim 2, wherein the matrix metalloproteinase is selected from the group consisting of MMP-2 (gelatinase A), MMP-9 (gelatinase B) and membrane-type1 MMP (MT1-MMP).

4. The method of claim 1, wherein the cell overexpresses a plasminogen activator receptor.

5. The method of claim 4, wherein the plasminogen activator is selected from the group consisting of t-PA and u-PA.

6. The method of claim 1, wherein the matrix metalloproteinase-recognized cleavage site is selected from the group consisting of GPLGMLSQ (SEQ ID NO:2) and GPLGLWAQ (SEQ ID NO:3).

7. The method of claim 1, wherein the plasminogen activator-recognized cleavage site is selected from the group consisting of PCPGRVVGG (SEQ ID NO:4), PGSGRSA (SEQ ID NO:5), PGSGKSA (SEQ ID NO:6), and PQRGRSA (SEQ ID NO:7).

8. The method of claim 1, wherein the cell is a cancer cell.

9. The method of claim 8, wherein the cancer is selected from the group consisting of lung cancer, breast cancer, bladder cancer, thyroid cancer, liver cancer, lung cancer, pleural cancer, pancreatic cancer, ovarian cancer, cervical cancer, colon cancer, fibrosarcoma, neuroblastoma, glioma, melanoma, monocytic leukemia, and myelogenous leukemia.

10. The method of claim 1, wherein the cell is an inflammatory cell.

11. The method of claim 1, wherein the lethal factor polypeptide is native lethal factor.

12. The method of claim 1, wherein the compound is native lethal factor.

13. The method of claim 1, wherein the lethal factor polypeptide is linked to a heterologous compound.

14. The method of claim 13, wherein the compound is shiga toxin, A chain of diphtheria toxin, or *Pseudomonas* exotoxin A.

15. The method of claim 13, wherein the compound is a detectable moiety.

16. The method of claim 13, wherein the compound is a nucleic acid.

17. The method of claim 13, wherein the compound is covalently linked to lethal factor via a chemical bond.

18. The method of claim 13, wherein the heterologous compound is recombinantly linked to lethal factor.

19. The method of claim 1, wherein the compound is a diagnostic or a therapeutic agent.

20. The method of claim 1, wherein the cell is a human cell.

21. The method of claim 1, wherein the mutant protective antigen protein is a fusion protein comprising a heterologous receptor binding domain.

22. The method of claim 21, wherein the heterologous receptor binding domain is selected from the group consisting of a single chain antibody and a growth factor.

23. An isolated mutant protective antigen protein comprising a matrix metalloproteinase or a plasminogen activator-recognized cleavage site in place of the native protective antigen furin-recognized cleavage site, wherein the mutant protective antigen is cleaved by a matrix metalloproteinase or a plasminogen activator.

24. The method of claim 23, wherein the matrix metalloproteinase or a plasminogen activator-recognized cleavage site is selected from the group consisting PCPGRVVGG (SEQ ID NO:4), PGSGRSA (SEQ ID NO:5), PGSGKSA (SEQ ID NO:6), PQRGRSA (SEQ ID NO:7), GPLGMLSQ (SEQ ID NO:2) and GPLGLWAQ (SEQ ID NO:3).